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August 3, 2000

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Commissioner of Patents and Trademarks, Washington, D.C. on

Anny J. Martin Date of Signature

Commissioner for Patents Washington, D.C. 20231

Re: U.S. Patent Application Serial No. 09/603,323

for MANUFACTURE OF WEB SUPERABSORBENT POLYMER

Our File No. 1179/2/2

Sir:

Please find enclosed in connection with the subject U.S. patent application the following documents:

- Information Disclosure Statement (8 pages);
- 2. Forms PTO/SB/08A (5 pages) and PTO/SB/08B (1 page), both in duplicate;
- Copies of cited references (92 references); and
- A return-receipt postcard to be returned to us with the U.S. Patent and Trademark Office filing stamp thereon.

Respectfully submitted,

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Enclosures

THE THE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Sun et al.

Serial No.: 09/603,323

Group Art Unit:

Filed: June 26, 2000

Docket No.: 1179/2/2

For: MANUFACTURE OF WEB SUPERABSORBENT POLYMER

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents Washington, D.C. 20231

Sir:

In accordance with 37 C.F.R. 1.56, 1.97, and 1.98, applicants' undersigned attorney brings to the attention of the Patent and Trademark Office the following references. Copies of the references as well as Forms PTO/SB/08A and PTO/SB/08B are attached hereto. This is not to be construed as a representation that a search has been made or that a reference is relevant merely because cited.

- U.S. Patent No. 4,076,663 to <u>Masuda et al.</u> discloses water absorbing starch resins.
- U.S. Patent No. 4,260,443 to <u>Lindsay et al.</u> discloses a laminated absorbent process.
- U.S. Patent No. 4,270,977 to <u>Herman et al.</u> discloses a process for preparing water sorptive products.
- U.S. Patent No. 5,409,771 to <u>Dahmen et al.</u> discloses aqueous-liquid and bloodabsorbing powdery reticulated polymers, a process for producing the same and their use as absorbents in sanitary articles.
- U.S. Patent No. 4,286,082 to <u>Tsubakimoto et al.</u> discloses an absorbent resin composition and a process for producing same.

- U.S. Patent No. 4,418,163 to <u>Murakami et al.</u> discloses a water absorbing composite comprising inorganic powder encapsulated with a crosslinked carboxyl polymer.
- U.S. Patent No. 4,454,055 to <u>Richman et al.</u> discloses an absorbent composition of matter, a process for preparing same and an article prepared therefrom.
- U.S. Patent No. 4,467,012 to <u>Pedersen et al.</u> discloses a composition for absorbent film and a method of preparation.
- U.S. Patent No. 4,550,033 to <u>Boutin</u> discloses free-flowing flakes of hydrophilic/water-soluble polymer gel.
 - U.S. Patent No. 4,552,618 to Kopolow discloses stabilized absorbent boards.
- U.S. Patent No. 4,587,308 to <u>Makita et al.</u> discloses a method for producing improved water-absorbent resins.
- U.S. Patent No. 4,600,458 to <u>Kramer et al.</u> discloses a method of making an absorbent laminate structure.
- U.S. Patent No. 4,626,472 to <u>Boutin</u> discloses free-flowing flakes of hydrophilic/water-soluble polymer gel.
- U.S. Patent No. 4,654,039 to <u>Brandt et al.</u> discloses hydrogel-forming polymer compositions for use in absorbent structures.
- U.S. Patent No. 4,732,968 to <u>Obayashi et al.</u> discloses a process for granulating a water-absorbent resin employing (a) water, (b) inorganic powder and (c) surfactant in an inert solvent.
- U.S. Patent No. 4,735,987 to <u>Morita et al.</u> discloses a method for manufacture of high-expansion type absorbent polymer.
- U.S. Patent No. 4,758,617 to <u>Tanioku et al.</u> discloses a process for preparing water-absorbing resin.
- U.S. Patent No. 4,833,198 to <u>Stanley, Jr. et al.</u> discloses a suspending agent for the suspension polymerization of water-soluble monomers.



 U.S. Patent No. 4,865,596 to Weisman et al. discloses composite absorbent structures and absorbent articles containing such structures.

U.S. Patent No. 4,914,066 to <u>Woodrum</u> discloses pellets of clay and superabsorbent polymer.

U.S. Patent No. 4,929,502 to <u>Giglia</u> discloses fibrillated fibers and articles made therefrom.

U.S. Patent No. 4,950,264 to Osborn, III discloses a thin, flexible sanitary napkin. This is one of the priority cases for EP Application Publication No. 0 336 578 A1, mentioned below.

U.S. Patent No. 4,977,192 to <u>Martineu et al.</u> discloses a polymer composition charged with powdered mineral material with a high capacity of water absorption.

U.S. Patent No. 4,986,882 to <u>Mackey et al.</u> discloses absorbent paper comprising polymer-modified fibrous pulps and a wet-laying process for the production thereof.

U.S. Patent No. 5,009,653 to Osborn, III discloses a thin, flexible sanitary napkin. This is one of the priority cases for EP Application Publication No. 0 336 578 A1, mentioned below.

U.S. Patent No. 5,087,656 to <u>Yoshinaga et al.</u> discloses a highly water-absorbent powdery polymer composition.

U.S. Patent No. 5,093,130 to <u>Fujii et al.</u> discloses powder coated hydrogel capsules.

U.S. Patent No. 5,096,944 to Itou et al. discloses a process for preparing particles of high water-absorbent resin.

U.S. Patent No. 5,145,906 to <u>Chambers et al.</u> discloses a super-absorbent polymer having improved absorbency properties.

U.S. Patent No. 5,147,343 to <u>Kellenberger</u> discloses absorbent products containing hydrogels with ability to swell against pressure.

U.S. Patent No. 5,147,921 to Mallo discloses new powdered superabsorbents,

- U.S. Patent No. 5,160,789 to <u>Barcus et al.</u> discloses fibers and pulps for papermaking based on the chemical combination of poly(acrylate-co-itaconate), polyol and cellulosic fiber.
- U.S. Patent No. 5,217,445 to <u>Young et al.</u> discloses absorbent structures containing superabsorbent material and a web of wetlaid stiffened fibers.
- U.S. Patent No. 5,300,192 to <u>Hansen et al.</u> discloses wet laid fiber sheet manufacturing with reactivatable binders for binding particles to fibers.
- U.S. Patent No. 5,308,896 to <u>Hansen et al.</u> discloses particle binders for high bulk fibers.
 - U.S. Patent No. 5,383,869 to Osborn, III discloses a thin, flexible sanitary napkin.
- U.S. Patent No. 5,422,169 to <u>Roe</u> discloses absorbent structures containing specific particle size distributions of superabsorbent hydrogel-forming materials in relatively high concentrations.
- U.S. Patent No. 5,447,977 to <u>Hansen et al.</u> discloses particle binders for high bulk fibers.
- U.S. Patent No. 5,453,323 to <u>Chambers et al.</u> discloses a superabsorbent polymer having improved absorbency properties.
- U.S. Patent No. 5,496,626 to <u>Hamajima et al.</u> discloses absorbent paper and an absorbent article provided therewith.
 - U.S. Patent No. 5,509,914 to Osborn, III discloses a thin, flexible sanitary napkin.
- U.S. Patent No. 5,538,783 to <u>Hansen et al.</u> discloses non-polymeric organic binders for binding particles to fibers.
- U.S. Patent No. 5,543,215 to <u>Hansen et al.</u> discloses polymeric binders for binding particles to fibers.
- U.S. Patent No. 5,549,589 to <u>Horney et al.</u> discloses a fluid distribution member for absorbent articles exhibiting high suction and high capacity.
- U.S. Patent No. 5,571,618 to <u>Hansen et al.</u> discloses reactivatable binders for binding particles to fibers.



particles.

PCT International Publication No. WO 92/02596 which is in Russian (and its counterpart European Patent Application Publication No. 0 495 108 A1 which is in English and this constitutes a translation) disclose a water-swelling polymer-mineral composite and a method of obtaining it.

PCT International Publication No. WO 92/15741 discloses a method of densifying crosslinked fibers.

PCT International Publication No. WO 93/17066 discloses absorbent polymers and their production.

PCT International Publication No. WO 93/21879 discloses a generally thin, flexible sanitary napkin with stiffened center.

PCT International Publication No. WO 93/24153 discloses surface treated absorbent polymers.

PCT International Publication No. WO 96/12849 discloses a nonwoven material containing a mixture of pulp fibres and long hydrophillic plant fibres and a method of producing the nonwoven material.

PCT International Publication No. WO 96/23474 discloses an absorbent article with fractionation member.

European Patent Application Publication No. 0 336 578 A1 discloses a thin, flexible sanitary napkin.

European Patent Application Publication No. 0 339 461 A1 discloses absorbent products containing hydrogels with ability to swell against pressure.

European Patent Application Publication No. 0 359 615 A1 discloses manufacture of superabsorbent composite structures.

European Patent Application Publication No. 0 437 816 A1 discloses a superabsorbent wet-lay nonwoven product.

European Patent Application Publication No. 0 483 816 A1 discloses a hydraulically needled nonwoven pulp fiber web, a method of making same and a use of same.

European Patent Application Publication No. 0 516 925 A1 discloses wrinkled absorbent particles of high effective surface area having fast absorption rate.

European Patent Application Publication No. 0 530 438 A1 discloses a superabsorbent polymer having improved absorbency properties.

European Patent Application Publication No. 0 641 885 A1 discloses a wet nonwoven cloth and a method of manufacturing the same.

Canadian Patent No. 2,008,323 discloses aggregates of water-swellable polymers and a method for producing them, and aggregates having increased hydration rate over unassociated water-swellable polymers.

Canadian Patent No. 2,042,183 discloses absorbent polymers, their manufacturing process and their use.

English language Abstract only of Japanese Patent Publication No. 01024808

A discloses reducing residual monomer in hydrophilic macromolecular polymer.

English language Abstract only of Japanese Patent Publication No. 01178509

A discloses preparation of water-absorbable resin.

English language Abstract only of Japanese Patent Publication No. 02052057

A discloses pulverising highly water absorbing resin.

English language Abstract only of Japanese Patent Publication No. 03045799

A discloses neutral paper production.

English language Abstract only of Japanese Patent Publication No. 03296592

A discloses cooling material for health or food industry.



English language Abstract only of Japanese Patent Publication No. 06000370

A discloses a water absorbing agent.

English language Abstract only of Japanese Patent Publication No. 06016822

A discloses water absorbing resin particles production used for diapers and napkins.

English language Abstract only of Japanese Patent Publication No. 06158581 discloses a wet nonwoven fabric having high uniform water absorbency.

English language Abstract only of Japanese Patent Publication No. 06263881

A discloses granulating highly water-adsorbable resins.

English language Abstract only of Japanese Patent Publication No. 63143906

A discloses a dehydration sheet, for selective dehydration of fresh food.

English language Abstract only of Japanese Patent Publication No. 07025935

A discloses manufacturing water absorbable polymer for disposable diapers, etc.

English language Abstract only of Japanese Patent Publication No. 08092454

A discloses hydrophilic polymer powder composition for preventing fluidity reduction.

English language Abstract only of Japanese Patent Publication No. 08217909

A discloses manufacture of water absorbing resin compositions for sanitary goods.

English language Abstract only of Japanese Patent Publication No. 59080459

A discloses a water absorbing resin powder composition.

English language Abstract only of Japanese Patent Publication No. 59192710

A discloses a water absorbing fibrous composite material.

English language Abstract only of Japanese Patent Publication No. 61141760

A discloses a high water absorbing gelling agent.

English language Abstract only of Japanese Patent Publication No. 62243648

A discloses a fibre particle powder.

English language Abstract only of Japanese Patent Publication No. 62254841

A discloses production of highly swelling water absorptive polymer.

English language Abstract only of Japanese Patent Publication No. 63105064

A discloses a highly water absorptive resin composition.

English language Abstract only of Japanese Patent Publication No. 63146901

A discloses a reversed phase suspension polymerisation.

English language Abstract only of Japanese Patent Publication No. 63210109

A discloses water retention agents, for sanitary materials or agricultural use.

English language Abstract only of Japanese Patent Publication No. 63216742

A discloses a coat layer for writing on synthetic and metal products.

English language Abstract only of Japanese Patent Publication No. 63279724

A discloses a granular culture soil with good water-absorbence.

United Kingdom Patent Application Publication No. GB 2 293 388 A discloses a liquid absorbent comprising internal spaces providing swelling capacity for binding liquid harmful materials.

Journal Article by Buchholz, "Keeping Dry with Superabsorbent Polymers", Chemtech, (September, 1994) discloses use for polyacrylate formulations ranging from diapers to optical fiber coatings to construction sealants.

Early passage of the subject application to issue is earnestly solicited.

Although it is believed that no fee is due, the Commissioner is hereby authorized to charge any deficiencies of payment associated with the filing of this Information Disclosure Statement to Deposit Account No. 50-0426.

Respectfully submitted.

JENKINS & WILSON, P.A.

Date: August 3, 2000

Jennifer L. Skord

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1179/2/2

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Enclosures

PTO/SB/08A (10-96)
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Application Number	09/603,323
Filing Date	06/26/2000
First Named Inventor	Fang Sun
Group Art Unit	
Examiner Name	(Vahon NO)
Attorney Docket Number	1179/2/2

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Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant
02/28/1978	Figures Appear
04/25/1995	
	
	Cited Document

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Examiner Initials*	No.1	Office ³		Cument Kind Code ^s (if known)	Name of Patenton or	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	76
	B1_		92/02596		Grigorian et al.	02/20/1992	riquies Appear	X
			92/15741		Sultze et al.	09/17/1992		X
	B3		93/17066		Johnson	09/02/1993		X
	<u>B4</u>		93/21879		Osborn, III	11/11/1993		X
	<u>B5</u>		93/24153		Graham	12/09/1993		X
$\overline{}$			96/12849		Holm et al.	05/02/1996		$\hat{\mathbf{x}}$
	<u>B7</u>		96/23474		Hammons et al.	08/08/1996		X
	B8 B9		0 336 578		Osborn, III	10/11/1989		X
			0 339 461 0 359 615		Kellenberger	11/02/1989		X
			0 3 3 9 0 1 3		Makoul et al.	03/21/1990		İΧ

the JP Patent Publications, the JP Patent Publication is not enclosed, but y an English language Abstract is enclosed. only an

Examiner Date Signature Considered

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¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. Applicant is to place a check mark here if English language Translation is attached.

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Filing Date	06/26/2000	_
First Named Inventor	Fang Sun	-
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	A21	4,929,502	Giglia	08/21/1990	
	A22	4,950,264	Osborn, III	12/11/1990	
	A23	4,977,192	Martineu et al. Mackey et al.	01/22/1991	
	A24	4,986,882	Osborn, III	04/23/1991	
	A25	5,009,653 5,087,656	Yoshinaga et al.	02/11/1992	
	A27		Fujii et al.	03/03/1992 03/17/1992	
		5,096,944	Itou et al.	09/08/1992	
	A29	5,145,906	Chambers et al.	09/15/1992	
	A30	5,147,343	Kellenberger Mallo	09/15/1992	
ļ	A31	5,147,921	Barcus et al.	11/03/1992	
		5,160,789 5,217,445	Young et al.	06/08/1993	
 		5,300,192	Hansen et al.	04/05/1994 05/03/1994	
 	A35	5 5,208,896	Hansen et al.	03/03/1994	
	A36	5,383,869	Osborn, III	06/06/1995	
		5,422,169	Roe Hansen et al.	09/05/1995	
<u></u>	A38	3 5,447,977	Chambers et al.	09/26/1995	
	A3	5,453,323 0 5,496,626	Hamajima et al.	03/05/1996	

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Initials*		Office ³		(ii kilomi)	Kim	07/24/1991		X
	B11		0 437 816		181111	05/06/1992		X
	B12		0 483 816		Barnes et al. Grigorian et al.	07/22/1992		X
	B13		0 495 108		Stanley et al.	12/09/1992		X
	B14		0 516 925		Chambers et al.	03/10/1993		X
	B15		0 530 438		Mizukami et al.	03/08/1995		X
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	B18	CA	2,042,183		Arakawa Kagaku Kogyo KK	09/23/1993		X
	B19		01024808		-10	109/23/1993		<u> </u>
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¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WiPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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Application Number	09/603,323
Application	06/26/2000
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First Named Inventor	Fang Sun
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Examiner Name	
Attorney Docket Number	1179/2/2

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			U.S. PATENT DOCU	MENTS	Pages, Columns, Lines,
A4 A4 A4	Number 1 5,509,914 2 5,528,783 3 5,543,215 4 5,549,589	(if known)	Name of Patentee or Applicant of Cited Document Osborn, III Hansen et al. Horney et al.	Date of Publication of Cited Document MM-DD-YYYY 04/23/1996 07/23/1996 08/06/1996 08/27/1996	Pages, Columns, Lines. Where Relevant Passages or Relevant Figures Appear
A4 A4 A4	5 5,571,618 6 5,575,786 7 5,589,256 8 5,607,550		Osborn, III Hansen et al. Akers Hansen et al.	11/19/1996 12/31/1996 03/04/1997 03/11/1997	
	A4 A4 A4 A4 A4 A4 A4	Cite No.1 Number A41 5,509,914 A42 5,528,783 A43 5,543,215 A44 5,549,589 A45 5,571,618 A46 5,575,786 A47 5,589,256 A48 5,607,550	ter Cite Number (if known) A 41 5.509,914	U.S. PATENT DOCU The Cite No. 1 Number Kind Code (if known) A41 5,509,914 Osborn, III A42 5,528,783 Hansen et al. A43 5,543,215 Hansen et al. A44 5,549,589 Horney et al. A45 5,571,618 Hansen et al. A46 5,575,786 Osborn, III A47 5,589,256 Hansen et al. A48 5,607,550 Akers	U.S. PATENT DOCUMENTS Cite No.1 Number Kind Code ² Name of Patentee or Applicant of Cited Document Name of Cited Document Name of Patentee or Applicant Name of Patentee or Applicant Date of Publication of Cited Document Name of Patentee or Applicant Date of Publication of Cited Document Name of Patentee or Applicant Name of Patentee or Applicant Odd/23/1996 Odd/

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Examiner	Cite		Foreign Patent Do	Kind Codes	Name of Patentee or Applicant of Cited Document	Cited Document MM-DD-YYYY	Passages or Relevant Figures Appear	T
Initials*	No.1	Office ³		(if known)	Rikagaku Kankyusho	09/28/1993		X
	B21		02052057		Mitsubishi Paper Mills Ltd	09/28/1993		X
	B22	JР	03045799		Nippon Shokubai Co Ltd	10/06/1993		ŢX
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	B26	JP_	06158581		Mitsubishi Petrochemical Co Lt	d 12/12/1994		- 15
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¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter Onique citation designation number. See attached knots of U.S. Patent Documents. Enter Onice that issued the document, by the two-fitted code (WIPO Standard ST.3). For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial moment of the patent document. Skind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if number of the patent document. possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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Substitute for form 1449A/PTO 09/603,323 Application Number INFORMATION DISCLOSURE 06/26/2000 Filing Date Fang Sun First Named Inventor STATEMENT BY APPLICANT Group Art Unit (use as many sheets as necessary) Examiner Name Attorney Docket Number 1179/2/2

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		U.S. Paten	t Docum	nent	Name of Patentee or Applicant	Date of Publication of Cited Document	Where Relevant Passages or Relevant
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Examiner	Cite		Foreign Patent Doo	Kind Code ^a	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Where Relevant Passages or Relevant Figures Appear	T6
Initials	No.1	Office		(if known)	Arakawa Chem Ind Ltd	11/04/1996		X
	B31		08217909	+_	Arakawa Kagaku Kogyo KK	09/25/1993		X
	B32	JP	59080459		Toray Ind Inc	09/25/1993		X
	B33		59192710		Miyata Kogyo KK	09/22/1993		X
	B34		61141760		Miyata Rogyo ICI	09/22/1993		X
	B35	JP	62243648		Kajiwara H	09/22/1993		X
	B36	JP	62254841		Osaka Yuki Kagaku Nippon Synthetic Chem Ind C	09/23/1993		\sqrt{X}
	B37	JP_	63105064		Shiraishi Chuo Kenkyusho KK	09/23/1993		- 1
l	B38	JP	63146901		Kanae Kagaku Kogyo KK	09/23/1993		X
	B39	JP	63210109			09/23/1993	Ī	X
<u> </u>	B40	JP	63216742		Newton KK the JP Patent Publ	ication is n	ot enclosed,	out

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¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 18 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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Co	mplete if Known
Application Number	09/603,323
Filing Date	06/26/2000
First Named Inventor	Fang Sun
Group Art Unit	#2
Examiner Name	1
Attorney Docket Number	1179/2/2

}					U.S. PATENT DOCL	JMENTS	Pages, Columns, Lines,
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Initials*		Office ³		(if known)	Beilhack Eng KK	09/23/1993		X
	B41		63279724		Gubella	03/27/1996		X
	B42	UK	2 293 388		Gubena			╁
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Substitute for form 1449B/PTO	Application Number	09/603,323		
INFORMATION DISCLOSURE	Filing Date	06/26/2000		
ATTEMENT BY ADDITION	First Named Inventor	Fang Sun		
STATEMENT BY APPLICANT	Group Art Unit	4.2		
(use as many sheets as necessary)	Examiner Name	7 2		
	Attorney Docket Number	1179/2/2		
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	OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	
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, C1	BUCHHOLZ, "Keeping Dry with Superabsorbent Polymers," Chemtech, p. 38-43, (August 2, 1994).	<u>x</u>
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	Cite No.1	OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. BUCHHOLZ, "Keeping Dry with Superabsorbent Polymers," Chemtech, p. 38-43,

Examiner	11. K	RAJEURU	Date Considered	JAN 23,2002
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